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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 341,921	07 21 1999	BERND BESSLING	47699	5757

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KEIL & WEINKAUF
1350 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036

EXAMINER

MANOHARAN, VIRGINIA

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 02/13/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

09/341.921

BESSLING ET AL

Office Action Summary

Examiner

Art Unit

Virginia Manoharan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 08 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other

Upon reconsideration, and In view of the Brief on Appeal under 37 CFR section 1.192 filed on November 08, 2002, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below, interalia, establishing a rejection of record on the "wherein" clause added to the independent claim after the Final Rejection dated March 18, 2002, paper # 8.

Claims 1-7 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 5 appears to be at odds with claim 1. Claim 1 recites "... mixture being introduced at a height above the bottom of at least 8 theoretical stages ..." whereas, claim 5 recites "... mixture being introduced at height above the bottom of at least 12 plates ..." which is inconsistent therewith. (Compare e.g., the recitation at page 3, lines 22-25 or original claim 10 reciting "or in a plate column". A dependent claim incorporates every feature of the claim from which it depends and cannot change or orient the limitation already recited in the independent claim).

b. It is unclear whether the claimed "a distillation apparatus" in claim 5, line 3, is the same or different from "... a distillation apparatus" in claim 1, line 4. (Underlinings supplied).

c. The claimed acetaldehyde in the wherein clause was not initially specified at lines 3-4 of claim 1.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffey (5,529,667) in view of Delannoy et al (4,966,657) or Gilman et al (3,418,338).

Coffey discloses a process for purification of ethylene oxide by distillation, comprising introducing an aqueous ethylene oxide feed via a feed into a distillation apparatus comprising at least one distillation column, the mixture being introduced at a height above the bottom of at least 8 theoretical stages (Fig. 3); a pure ethylene oxide containing about 2-10 ppm by weight formaldehyde, is taken off at the top sidestream (see col 11, line 9-10); in the bottom phase, a mixture is obtained which contains less than about 0.1 by weight of ethylene oxide (col. 6, lines 43-61); the distillation apparatus having a side take-off (83) between the feed (32) and the bottom (56), and wherein a mixture which is obviously richer with acetaldehyde is removed via said side take-off as broadly claimed in claim 1.

Coffey introduces the feed at the specific minimum height, as shown e.g., in Fig. 3, i.e., at the 50th and 58th or 66th trays (deemed corresponding to the at least 8 theoretical stages as claimed). The "about 2-10 ppm by weight" of formaldehyde contained in pure ethylene oxide and the "about 0.1" by weight of ethylene oxide at the bottom phase of Coffey would obviously read on the claimed "4 ppm or less", and the claimed "less than 5% by weight of ethylene oxide" respectively. The process of Coffey differs from the claimed invention in that claim 1 for example, recites that the pure

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ethylene oxide is taken off at the top". Coffey withdraws the pure ethylene oxide at the top sidestream. However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the process of Coffey such that the pure ethylene "oxide is removed at the top as since it is conventionally done in the art, as taught in the abstracts of Delannoy or Gilman et al, and since Coffey introduces the feedstream at about the same distance from the bottom as claimed. It is noteworthy that there are that no other claimed conditions or essential features delineating process/method not shown nor render obvious by the prior art. It would be obvious to introduce at least 5% water in the distillation column as claimed in claim 5 and additional water as claimed in claim 6, and to use an intermediate reboiler as claimed in claim 9 as such are all conventionally done in the art. Note e.g., the abstract, col. 11, lines 39-40 and Figs 2-3 of Coffey. See also col. 3, lines 29-35 of Delannoy relative to claim 5.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coffey in view of Bessling et al (Chem. Lrg. Technik).

Coffey is discussed above. It would have been obvious that the packings of Coffey is a flame arresting packings in the manner as taught by Bessling for safety reasons.

Claims 3 and 4 each combined with the "wherein clause of claim 1" are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia Manoharan whose telephone number is 703-308-3844. The examiner can normally be reached on Tuesday-Friday from 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9462 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

V. Manoharan/mn
February 12, 2003

(Signature)

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2/12/03